



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/714,578	11/14/2003	William Ross Rapoport	H0006403 (H000-1-6403)	1795
128	7590	11/21/2005	EXAMINER	
HONEYWELL INTERNATIONAL INC. 101 COLUMBIA ROAD P O BOX 2245 MORRISTOWN, NJ 07962-2245			NGUYEN, TUAN N	
			ART UNIT	PAPER NUMBER
			2828	

DATE MAILED: 11/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/714,578	RAPOPORT ET AL.	
	Examiner	Art Unit	
	Tuan N. Nguyen	2828	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 and 40-54 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-15, 21-29 and 40-54 is/are allowed.
- 6) ☒ Claim(s) 16-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 September 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input checked="" type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. <u>11/09/05</u> . |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>09/01/2005</u> . | 6) <input type="checkbox"/> Other: _____. |

DETAILED ACTION

Drawings

1. New corrected drawings are required in this application because it is not acceptable to the draftsman, see the attached Notice of Draftsman drawing review. The corrected drawings are required in reply to the Office action.

Claim Objections

2. Claims 53-54 objected to because of the following informalities: citing limitation after the period “not very likely, path too long”.

Claims 18, 20 lack proper antecedent for “the third reflected beam”.

Claim 21 “a fourth mirror, and *third mirror*” should be “ a fourth mirror, and *fourth mirror*” .

Claim 40, “a second beam *from a first end* of the laser gain medium” should be “ a second beam *from a second end* of the laser gain medium”. Appropriate correction is required.

Election/Restriction

3. Claims 30-39 are canceled, because the device can be made from different process. Authorization was given by Mr. Mark Lorbiecki (Attorney for Applicant, Reg. No. 45643) on 11/9/2005.

Claim Rejections - 35 USC § 102

Art Unit: 2828

4. The following is a quotation of 35 U.S.C. 102(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

5. Claims 16-17 are rejected under 35 U.S.C. 102(a) as being unpatentable over Sochava et al. (US 6665321).

With respect to claim 16, Sochava et al. ' 321 shows an intra-cavity optics plate assembly for components of a laser resonator cavity plate including: an intra-cavity optics plate (Fig 14: 1316) (Col 11: 30-40; base of "sled"); an optical coupler, affixed to the optics plate (Fig 14: 116) and configured to receive a first beam from a first end of a laser gain medium (Fig 14: 104 laser first end, 116 optics plate affixed to plate 1316); and a high reflector (Fig 14: 114) (Col 11: 40-45), affixed to the optics plate and configured to receive a second beam from a second end of the laser gain medium (Fig 14: 106 laser second end, 106 optics plate affixed to plate 1316).

With respect to claim 17, Figure 14 shows the intra-cavity optics plate is configured as a mechanical coupling between the optical coupler and the high reflector (Fig 14: 116 optic coupler and 114 high reflector attaching to plate 1316).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2828

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or non-obviousness.
7. Claims 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sochava et al. (US 6665321) in view of McDonald (US 68451221).

With respect to claims 18, 19, 20 Sochava et al. '321 discloses an intra-cavity optics plate assembly including: an intra-cavity optics plate, an optical coupler, and a high reflector (Fig 14: 114, 116, 1316). Claims 18-20 further require an etalon, Brewster plate, and tuning optics affixed to the optic plate to intercept the third reflected beam. Sochava et al. '321 did not disclose the use of etalon, Brewster plate, or tuning optics. However, McDonald '121 discloses the use of etalon (Col 1: 20-25) (Col 7: 5-35), Brewster plate (Col 4: 15-30), and various usage of tuning optics (Col 1: 30-35) for tunable laser to intercept the laser beam to tune, select or adjust the correct wavelength. It would have been obvious to one of ordinary skill in the art to provide Sochava et al. 321 with the etalon, Brewster plate, or tuning optics as taught or suggested by McDonald '121, for the benefit tuning, selecting or adjusting the correct wavelength.

REASON FOR ALLOWANCE

Allowable Subject Matter

Art Unit: 2828

8. The following is an examiner's statement of reasons for allowance, with respect to claim 1, 21, 40 the references of the record fail to teach or suggest:

Claim 1:

A rugged laser resonator comprising a laser pump housing assembly having a laser pump housing and a laser gain medium with first and second end, where a resonator assembly hold the laser pumping housing and include at least four mirrors, where the first mirror receives a first incident laser beam from the first end of the laser then strike the third mirror, where the second mirror receives the second incident laser beam from the second end of the laser then strike the fourth mirror, wherein the laser resonator including an intra-cavity optics plate assembly having an intra-cavity optics plate, and optical coupler to receive laser beam from the third mirror, and a high reflector receive laser beam from the fourth mirror.

Claims 21, 40:

An X-fold resonator assembly, hold the laser pump housing including a laser gain medium having a first and a second end, and hold an optics plate assembly, the resonator assembly including: a first mirror, the first mirror being configured to reflect a first laser beam from the first end; a second mirror, the second mirror configured to reflect a second laser beam from the second end to intersect the first laser beam; a third mirror, and third mirror configured to reflect the first laser beam from the first mirror to the optics plate assembly, and a fourth mirror, and fourth mirror configured to reflect the second beam from the second mirror and to the optics plate assembly.

Communication Information

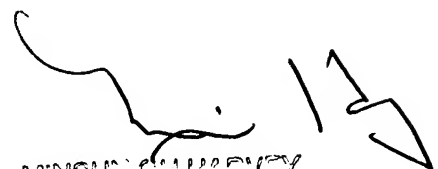
Art Unit: 2828

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan N Nguyen whose telephone number is (571) 272-1948. The examiner can normally be reached on M-F: 7:30 - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harvey Minsun can be reached on (571) 272-1835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tuan N. Nguyen


MIN SUN COMPANY
PATENT ATTORNEY